



Denver Regional Transportation District Metro Area Connection LRT DENVER, CO



Burns Engineering undertook the final design of the catenary system and DC traction power facilities for Denver's Regional Transportation District Metro Area Connection (MAC) light rail line and LRVI maintenance facility. Scope included the preparation of construction drawings and specifications for all aspects of the OCS and traction power subsystems.

Particular emphasis was placed on aesthetically pleasing OCS design, as the project is primarily located in an urban environment. Residents of Denver are particularly sensitive, because of the city's geographical location, to maximizing their view of the majestic Rocky Mountains.

The Denver LRT is approximately 5.3 miles long and consists of two types of overhead catenary. The downtown section, which constituted the initial project scope, uses a fixed-termination, single trolley wire with buried-along-track feeders tapped to the trolley wire at regular intervals. There are three one-megawatt substations supplying power at a voltage of 825 volts at full load. The southern extension is composed of a two-wire, simple, auto-tensioned catenary on a segregated right-of-way, and has three additional one-megawatt substations. The maintenance facility and storage yard, located mid-system, are powered by their own substation. In the CBD the two-track system diverges into a single-track loop, with the two tracks converging again at the north, all of which are electrified with similar catenary as provided for the outer portion of the line.



Incorporated into the traction power design are several notable features, including PLC control, adjacent substation transfer trip, substation by-pass disconnect switches, a "cool" operating transformer, air conditioning, and low-resistance grounding.